



**ATI Millersburg**  
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February 25, 2021

Mr. Chan Pongkhamsing  
EPA Remedial Project Manager  
U.S. EPA Region 10  
1200 Sixth Avenue, ECL 111  
Seattle, WA 98101

RE: 2021 Water Monitoring Schedule and Transducer Installation

Dear Mr. Pongkhamsing:

Please find the enclosed 2021 Water Monitoring Schedule, associated figure of monitoring locations, and a figure with proposed transducer installation locations to monitor the groundwater divide near the Acid Sump Area. The monitoring schedule and transducer installation were discussed with the U.S. Environmental Protection Agency (EPA) and the Oregon Department of Environmental Quality (DEQ) in the annual meeting on January 26, 2021.

The monitoring schedule for 2021 (Table 1) has been modified from the 2020 monitoring schedule as outlined below. The well and surface water locations at the Main Plant and Solids Area are shown in Figure 1.

- For the sake of clarity, the surface water sample analyses were added to the monitoring schedule table. Historically, surface water was listed in a separate table in the *Quality Assurance Project Plan for Site-Wide Remedial Actions* submitted in December 2015.
- Additional water level measurements will be collected in several areas, including the Extraction Area and Farm Ponds Area, for a better understanding of site hydrology. Additionally, water levels will be collected at non-pumping extraction wells.
- Groundwater samples will continue to be collected in August in the Solids Area. However, the water level measurements will be collected with the Fabrication and Extraction Areas fall monitoring event (likely in the beginning of September) to provide data for a sitewide synoptic water level event.
- In the Farm Ponds Area, monitoring wells PW-106S and PW-108A will be sampled to aid in future statistical analyses.

- Monitoring wells PW-94A and PW-82A will be sampled in the spring in accordance with the *Fabrication Area Extraction Well Shutdown Pilot Test Work Plan's* performance monitoring schedule, submitted to EPA and DEQ on June 5, 2020.
- Former Crucible Cleaning Area monitoring wells PW-93A, PW-94A, and PW-100A will have a one-time volatile fatty analysis (VFA) performed during the fall 2021 event. The VFA is to get a better understanding of the breakdown of total organic carbon near the enhanced in-situ bioremediation (EISB) injection area.
- ATI proposes not to monitor for EISB and monitored natural attenuation (MNA) parameters in the Acid Sump Area. Constituents consist of chloride, sulfate, nitrate, and alkalinity for MNA, with the addition of methane, ethane, and ethene for EISB. However, nitrate will continue to be sampled as most Acid Sump Area wells as indicated on the Table 1. These analyses are a legacy from the EISB injections performed in 2009. ATI plans to conduct further assessment in this area and implement a remedial alternative to reduce source material. Sufficient groundwater geochemistry data has already been collected for this evaluation.
- ATI proposes to cease monitoring at well PW-10 (marked in yellow in Figure 1). Previously, EPA has requested that FW-6, a nearby extraction well that was never turned on, be monitored in place of PW-10 due to concerns that PW-10 did not fully penetrate the Linn Gravels aquifer. The screened interval at PW-10 is from 7 to 11 feet below ground surface (bgs) and the screened interval at FW-6 is from 8 to 18 feet bgs, across a longer portion of the aquifer.
- ATI proposes to cease monitoring at temporary monitoring wells TMW-3 and TMW-5 (marked in yellow in Figure 1). These wells were installed in 2009, scoped to last 3 to 5 years and are ½-inch diameter wells with pre-packed screens. Construction, age, and how the well responds to low-flow sampling lead to concerns over reliability of data.

The *Optimization Review Report, Remedial Process Optimization Study* issued on November 25, 2019 by EPA had a recommendation to use transducers at the site (5.8.3), and DEQ suggested in the January 2020 annual meeting using transducers to better understand the groundwater divide near the Acid Sump Area. The historic swing in the groundwater divide based on groundwater elevation data from 2017 through 2020 is provided on Figure 2. This data was discussed in the January 2021 annual meeting and it was agreed that transducers would be placed in wells PW-14, PW-13, I-3, EI-5, PW-99A, PW-12, and PW-92A. The transducers will collect data once per day for a period of one year. The wells selected will provide data regarding seasonal changes to the location of the divide within the Acid Sump Area, and upgradient (PW-14) and downgradient (PW-92A) of the area.

ATI plans to follow the attached monitoring schedule in 2021, starting with the spring event in 2021. Additionally, ATI plans to install the transducers in April 2021. If EPA has any concerns, please contact me as soon as possible.

Mr. Chan Pongkhamsing  
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If you have any questions, please feel free to contact me at 541.812.7376.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Noel Mak', with a stylized, cursive script.

Noel Mak  
NPL Program Coordinator

Enclosures:     1. *Table 1. 2021 Water Monitoring Schedule*  
                      2. *Figure 1. Well and Surface Water Locations*  
                      3. *Figure 2. Proposed Transducer Locations*

**Table 1. 2021 Water Monitoring Schedule**

ATI Millersburg Operations, Oregon

Location	Water Level <sup>1</sup>		WQ Sample, Field Parameters		Laboratory Analysis										
					Metals		Anion/Cation				TDS	Radium-226/228	CVOCs	EISB	PCP
	Spring	Fall	Spring	Fall	As, Cd, Ni	Other	NH <sub>3</sub>	Cl	F	NO <sub>3</sub>					
Extraction Area															
Feed Makeup Area															
EW-1		x		x	x	Be	x	x	x		x	x			
EW-2			x	x	x	Be	x	x	x		x	x			
EW-3		x		x	x		x	x	x		x	x			x
PW-21A	x	x	x	x	x		x	x	x	x	x	x	VC & MIBK		
PW-22A		x		x	x		x	x	x		x	x	VC & MIBK		x
PW-23A	x	x	x	x	x	Be	x	x	x	x	x	x			x
PW-24A		x		x	x		x	x	x	x	x	x			
PW-27A		x		x	x		x	x	x	x	x	x			
PW-28A	x	x	x	x	x	Be	x	x	x		x	x			
PW-50A		x		x	x	Be	x	x	x		x	x			x
PW-51A		x		x	x		x	x	x	x	x	x			
PW-52A		x		x	x	Be	x	x	x		x	x			
PW-102A		x													
PW-103A		x													
South Extraction Area															
EW-4		x													
EW-5		x													
EW-6		x													
PW-25A		x													
PW-26A		x													
PW-29A		x													
PW-47A		x													
PW-48A		x													
PW-49A		x													
PW-57A		x													
PW-96A		x		x	As								x		

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					Metals		Anion/Cation				TDS	Radium-226/228	CVOCs	EISB	PCP
	Spring	Fall			Spring	Fall	As, Cd, Ni	Other	NH <sub>3</sub>	Cl					
PW-97A		x													
Fabrication Area															
Acid Sump Area															
FW-3		x	x	x					x	x			x		x
E-11		x		x					x	x			x		
EI-5		x		x					x	x			x		
FW-6		x		x					x	x			x		
I-2		x		x					x	x			x		
I-3		x		x					x	x			x		
PW-10															
PW-11		x		x					x	x			x		
PW-12		x	x	x					x	x			x		
PW-13		x		x					x	x			x		
PW-14		x													
PW-15AR		x													
PW-16A	x	x	x	x					x	x			x		
PW-19A	x	x	x	x					x	x			x		
PW-32A		x													
PW-33A		x													
PW-34A		x													
PW-76A	x	x	x	x					x	x			x		
PW-77A	x	x	x	x					x	x			x		
PW-78A	x	x	x	x					x	x			x		
PW-79A	x	x	x	x					x	x			x		
PW-80A		x		x									x		
PW-81A		x		x									x		
PW-82A		x	x	x					x	x			x		x
PW-98A		x	x	x					x	x			x		

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ATI Millersburg Operations, Oregon

Location	Water Level <sup>1</sup>		WQ Sample, Field Parameters		Laboratory Analysis										
					Metals		Anion/Cation				TDS	Radium-226/228	CVOCs	EISB	PCP
	Spring	Fall	Spring	Fall	As, Cd, Ni	Other	NH <sub>3</sub>	Cl	F	NO <sub>3</sub>					
PW-99A		x	x	x					x	x			x		
TMW-3															
TMW-5															
Ammonium Sulfate Storage Area															
FW-5			x	x			x		x	x			x		
PW-01A		x		x			x						x		x
PW-03A		x		x			x			x			x		x
PW-83A		x		x			x						x		x
PW-89A	x	x	x	x			x		x	x			x		x
PW-92A		x		x									x		
Former Crucible Cleaning Area															
FW-1		x	x	x									x		
FW-7		x		x	As								x		
MW-01A	x	x	x	x									x		
MW-02A		x		x	As								x		
MW-03A		x		x	As					x			x		x
MW-04A		x		x									x		
MW-05A		x													
MW-06A		x													
MW-07A		x													
MW-08A		x													
MW-09A		x													
MW-10A		x													
MW-11A		x													
PW-31A		x		x						x			x		x
PW-45A		x		x									x		
PW-68A	x	x	x	x						x			x		x
PW-69A		x		x	As				x				x	x	

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ATI Millersburg Operations, Oregon

Location	Water Level <sup>1</sup>		WQ Sample, Field Parameters		Laboratory Analysis										
					Metals		Anion/Cation				TDS	Radium-226/228	CVOCs	EISB	PCP
	Spring	Fall	Spring	Fall	As, Cd, Ni	Other	NH <sub>3</sub>	Cl	F	NO <sub>3</sub>					
PW-70AR		x		x									x		
PW-71A		x		x									x		
PW-72A		x	x	x	As								x		
PW-93A		x		x	As								x	x, VFA	
PW-94A		x	x	x	As				x				x	x, VFA <sup>2</sup>	
PW-95A		x		x					x				x	x	
PW-100A		x		x									x	x, VFA	
PW-101A		x		x									x	x	
Material Recycle Area															
FW-2		x	x	x									x		
PW-20A		x													
PW-42A		x		x									x		
PW-84AR		x		x									x		
PW-85A		x		x									x		
PW-86A		x		x									x		
PW-87A		x		x									x		
PW-88A		x	x	x									x		
PZ-01A		x													
Dump Master Area															
FW-4		x	x	x									x		
PW-30A	x	x	x	x									x		
PW-46A		x		x									x		
PW-73A		x													
PW-73B		x	x	x									x		
PW-74A		x													
PW-74B		x		x									x		
PW-75A	x	x	x	x									x		
PW-91A		x	x	x									x		

**Table 1. 2021 Water Monitoring Schedule**

ATI Millersburg Operations, Oregon

Location	Water Level <sup>1</sup>		WQ Sample, Field Parameters		Laboratory Analysis										
					Metals		Anion/Cation				TDS	Radium-226/228	CVOCs	EISB	PCP
	Spring	Fall			Spring	Fall	As, Cd, Ni	Other	NH <sub>3</sub>	Cl					
Farm Ponds Area															
PW-35A	x														
PW-36A	x														
PW-37A	x														
PW-38A	x														
PW-39A	x														
PW-40A	x														
PW-40S	x														
PW-43A	x														
PW-43S	x														
PW-44A	x														
PW-44S	x														
PW-64A	x														
PW-64S	x														
PW-65A	x														
PW-65S	x														
PW-66A	x														
PW-66S	x														
PW-67A	x														
PW-67S	x														
PW-104S	x		x										x		
PW-105S	x		x										x		
PW-106S	x		x										x		
PW-107S	x		x										x		
PW-108A	x		x										x		
Solids Area <sup>3</sup>															
PW-07		x													
PW-09		x		x				x							

**Table 1. 2021 Water Monitoring Schedule**

ATI Millersburg Operations, Oregon

Location	Water Level <sup>1</sup>		WQ Sample, Field Parameters		Laboratory Analysis										
					Metals		Anion/Cation				TDS	Radium-226/228	CVOCs	EISB	PCP
	Spring	Fall	Spring	Fall	As, Cd, Ni	Other	NH <sub>3</sub>	Cl	F	NO <sub>3</sub>					
PW-17B		x		x				x							
PW-18B		x		x	As			x							
PWA-1		x		x				x							
PWA-2		x		x				x							
PWB-1		x		x	As			x							
PWB-2		x		x	As			x							
PWB-3		x		x				x	x			x			
PWC-1		x													
PWC-2		x													
PWD-1		x		x	As			x							
PWD-2		x		x				x							
PWE-1		x		x	As			x	x						
PWE-2		x		x				x	x						
PWF-1		x		x		Cn		x							
PWF-2		x		x		Cn		x							
Surface Water															
MC-D			x	x					x	x			x		
MC-M			x	x					x	x			x		
MC-U			x	x					x	x			x		
TC-D			x	x			x						x		
TC-U			x	x			x						x		

**Table 1. 2021 Water Monitoring Schedule***ATI Millersburg Operations, Oregon*

Location	Water Level <sup>1</sup>		WQ Sample, Field Parameters		Laboratory Analysis									
					Metals		Anion/Cation				TDS	Radium-226/228	CVOCs	EISB
	Spring	Fall	Spring	Fall	As, Cd, Ni	Other	NH <sub>3</sub>	Cl	F	NO <sub>3</sub>				

**Notes**

<sup>1</sup> Water levels will not be collected at actively operating extraction wells (e.g., FW-5 and EW-2).

<sup>2</sup> A VFA sample will be collected at PW-94A during the fall monitoring event only.

<sup>3</sup> Water quality samples for the Solids Area annual monitoring event will be collected in August, similar to previous years. Water level measurements in the Solids Area will be collected to coincide with the Fabrication Area and Extraction Area fall monitoring event for a sitewide synoptic water level event.

As = total arsenic

Be = total beryllium

Cd = total cadmium

Cl = chloride

Cn = cyanide

CVOCs = chlorinated volatile organic compounds

EISB = enhanced in-situ bioremediation (CVOC, TOC, NO<sub>3</sub>, Cl, SO<sub>4</sub>, Alkalinity, MEE)

F = fluoride

HS = hot spot

MEE = methane, ethane, ethene

MIBK = methyl isobutyl ketone or 4-methyl-2-pentanone

NA = not applicable

NHS = non-hot spot

Ni = total nickel

NO<sub>3</sub> = nitrate

NH<sub>3</sub> = ammonia

P = perimeter

PCP = pentachlorophenol

SO<sub>4</sub> = sulfate

TDS = total dissolved solids

TOC = total organic carbon

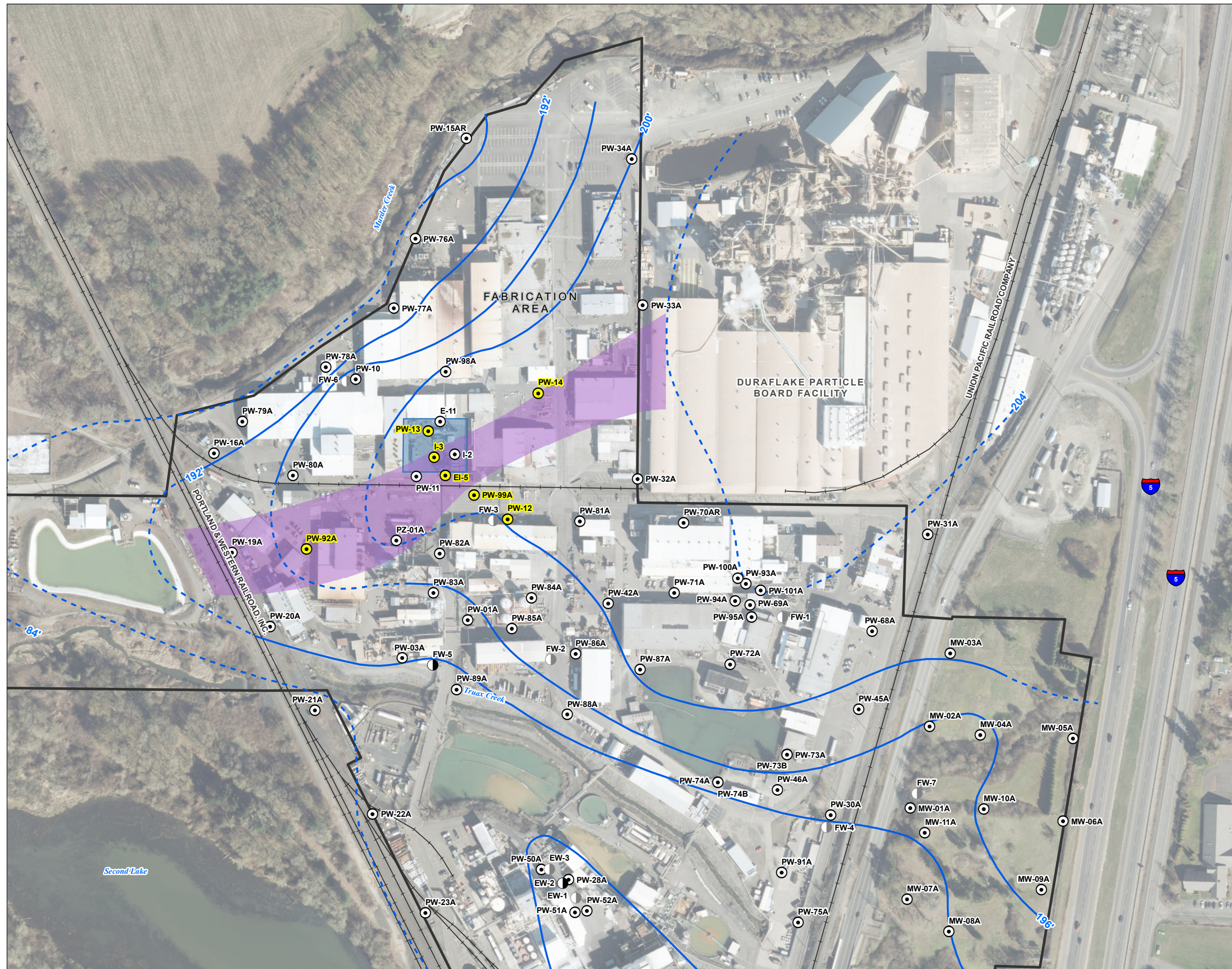
VC = vinyl chloride

VFA = volatile fatty analysis

WQ = water quality



**FIGURE 2**  
**Proposed Transducer Locations**  
*ATI Millersburg Operations, Oregon*

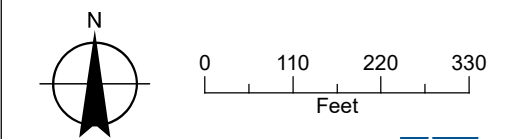


**LEGEND**

- Proposed Monitoring Well for Transducer Placement
  - Monitoring Well
  - Extraction Well
  - Extraction Well, Inactive
  - Fall 2020 Linn Gravel Groundwater Contour (dashed where inferred)
  - Historic Shift in Groundwater Divide, 2017-2020
  - Acid Sump Area
- All Other Features**
- Property Boundary
  - Railroad

**NOTE**

1. The following Linn Gravel monitoring wells were not used for contouring:
- FW-6 is used for contouring instead of PW-10 at EPA's request.
  - PW-48A is a shallow well. The bottom of the screen (19.6') is above the static water level at other nearby Extraction Area wells.
  - PW-69A is 3 feet from an outdoor freshwater spraying station that operates 24 hours a day and may leak through cracks in concrete pads.
  - PW-72A, PW-73A, and PW-74A are likely hydraulically connected to the cooling pond.



Date: February 4, 2021  
Data Sources: Linn Co., ESRI, Digiglobe 2018